

Main Street Bridge
On US 40 (National Road)
Over the East Fork of Whitewater River
Approximately 0.5 mile west of US 27
In Richmond
Wayne County,
Indiana

HAER NO. IN-89

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Great Lakes System Support Office
1709 Jackson Street
Omaha, Nebraska 68102

HISTORIC AMERICAN ENGINEERING RECORD

MAIN STREET BRIDGE ~~ON NATIONAL ROAD~~
~~(U.S. 40)~~

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- Location:** Spanning the East Fork of Whitewater River on U.S. 40 (National Road) 0.5 mile west of U.S. 27. Located within the municipal boundaries of the City of Richmond, Wayne County, Indiana
UTM: 16.679560.4410670
QUAD: Richmond, Indiana
Section 5, Township 13N, Range 1W
Richmond Township, Wayne County, Indiana
- Date of Construction:** The structure was under construction during the period between 1917 - 1920.
- Present Owner:** Indiana Department of Transportation
IGC-N 755, 100 North Senate Avenue
Indianapolis, IN 46204-2217
- Present Use:** Transportation of motorized vehicles and pedestrians across East Fork of Whitewater River.
- Significance:** The Main Street Bridge is an open-spandrel arch type of construction. It is the oldest and one of the longest in Indiana. This type of construction was very expensive and of the couple of dozen built in Indiana, only a dozen remain today of those built before 1930. The bridge is eligible for inclusion in the National Register of Historic Places, and it is of statewide significance.
- Project Information:** This documentation was initiated February 1995 in accordance with the Memorandum of Agreement by the Indiana Department of Transportation as a mitigative measure prior to the removal of the bridge.

Site Description:

The Main Street Bridge on National Road (U.S. 40) was constructed between 1917-1920. The bridge stretches from the west bluff, directly eastward, with a slope to First Street and it is 182.6 m (599'-0) long. The bridge across the East Fork of Whitewater River and Sim Hodgkin Parkway is a reinforced concrete open spandrel arch, consisting of three main spans in the middle, each 38.1 m (125'-0) clear, and four approach spans, each 12.2 m (40'-0) clear. Total structure length including the thickness of piers is 182.6 m (599'-0). The structure provides a 12.95 m (42'-6") clear roadway width, 2.44 m (8'-0)

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sidewalks (1.82 m or 6'-0" cantilever) on each side, and concrete railings. The wingwalls at both ends of the abutments are 13.1 m (43'-0") long, except on the north side of the east abutment which is 48.8 m (160'-0") long. The structure is built to a negative 2.5% (west to east) grade. The roadway elevation is approximately 21.33 m (70'-0") higher than the Q100 elevation (the probability of flood waters reaching that level or elevation once in one hundred years). The posted speed limit is 30 mph.

Historical Background:

There was no bridge across the East Fork of Whitewater River prior to 1835 and most of the pioneers settled on the east side of the river. This explains why most of the older buildings in Richmond are located on the east side of the river. The early pioneers crossed the river via the dangerous descent to the river bottom, fording the stream and then the steep ascent on the other side. The only available description of the old ford which was used before the bridge was built was written by Mrs. Sarah Wrigley, the daughter of Richmond's second mayor and the first librarian of Morrison-Reeves library. According to her description, the highway from the west descended to the valley by way of a road cut in the hillside and terminated just at the ford below where the Starr Piano factory was situated. At this point, the river flowed over a bed of limestone, and, as the east bank was low, a freshet caused the water to spread over the valley to the east side. The road ascended the hill at a steep incline, then east to the Front (Fourth) Street, north on Front to Main and east to the state line.¹

Another account of the pioneers' trail through Richmond is narrated by Jeremiah Cox II, son of the pioneer Jeremiah Cox, a North Carolina Quaker, co-founder with John Smith of Richmond, who arrived sometime in July, 1806. In his memoirs, Jeremiah Cox II wrote that he helped to cut the road in which the family came to what is now Richmond and "the other (road) west from that on our south line to the river. This road ran where Main Street now is. The last mentioned road was cut to haul stone from the river to build our chimney." The Cox cabin was built near North Tenth and "D" Streets.

This river road turned to the south near present Second Street and descended to the river near what is now South A Street. The road crossed the river at a ford south of the Old Cox Mill and below the former Starr Piano company's plant. It climbed to the top of the western bluff along an irregular shelf to a point near the South G Street bridge.

For many years, this difficult crossing of the Whitewater River was a hazard on the National Road. Many thousands of wagons carrying immigrants to their future homes in the west and northwest passed up this steep slope. It remained the principal crossing of the Whitewater River until the wooden bridge was erected in 1835 on the National Road, half a mile north of the ford. In 1832, the Congress appropriated \$100,000 for

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work on the Cumberland (National) Road in Indiana, including bridges over the East and West forks of the Whitewater River. The work began in 1833.

The first Main Street bridge was a covered wooden bridge, carrying the National Road. The National Road was the first major road to be built with federal funds. The contract for the superstructure was taken by Channing and Tindall A. Madison in 1833, and the timbers of the arches were prepared by use of the old fashioned whipsaw. All the work was done by the hand except the turning of the side columns supporting the roof. These were furnished by Thomas J. Larsh who received \$1.50 for each of the columns. A blacksmith shop was erected just south of the bridge and all the bolts used were made there. Joseph Rich and Thomas Kem took a subcontract for furnishing the finished timbers. The structure was thrown open to travel in 1835. In 1877 the ends of the arch which had decayed, were replaced at a cost \$184.52. In July 1895 the bridge was closed to traffic by order of Mayor James Ostrander. After the wooden Main Street bridge was torn down, parts of it were taken to Glen Miller park and placed on exhibition there. Contractors used the stones in the abutments to build foundations in Richmond houses. Part of the abutments still remain in the old position and are still to be seen.

William Dewey, who made an 1840 map of the City of Richmond, was one of the engineers for the old wooden bridge. Other engineers who assisted him and supervised the work were Capt. C. A. Ogden, John Frazier, and Jonathan Knight.²

A new steel bridge across the Whitewater River was constructed, which replaced the old wooden covered bridge. The steel bridge was opened to traffic on June 2, 1897. The steel bridge remained in use for only eighteen years and cost Wayne County \$61,000. The steel bridge was 635 feet long, 42 feet wide and had a roadway width of 30 feet with 6 feet of sidewalks on both sides. The bridge was 15 feet 3 inches higher at the west end than at east end. The contract was let on July 7, 1896 and the bridge was built by Massellon Bridge Company, Massellon, Ohio.³

In October 1911, the county bridge engineer prepared a report on the condition of the steel bridge and made recommendations to prolong its life. The report indicated an absence of a drainage system under the tracks of the traction company, an unbalanced loading caused by the interurban car traffic on the extreme south of the roadway and the presence of copper feed wires carrying a heavy load of electrical current. The report recommended that a new system of drainage be installed and the copper wires moved at least 50 feet away from the structure to avoid electrolysis which caused deterioration of the bridge. The report further stated that regular painting of the bridge every four years would prolong its life. However, the bridge was not painted since 1903.⁴

A report prepared by the committee of expert bridge engineers was submitted to the board of county commissioners in September 1915. The commission to prepare the bridge inspection report was composed of W. K. Hatt, head of the civil engineering department at Purdue University, E. B. Vawter, consulting engineer of West Lafayette, Indiana, John Mueller, Wayne County bridge engineer and Fred Charles, city engineer of Richmond. The conclusions reached by the committee of experts indicated that the Main Street bridge was not designed for present conditions, and was wholly inadequate to carry the loads, that it was in such a bad condition that the cost of repairs would be too large and the reparation would be inadequate. Engineer W. K. Hatt recommended tests to determine the firmness of the ground under the bridge by means of soil borings. He stated that if the foundation was found to be firm, a concrete bridge would be advisable, since the concrete bridge would last longer and be more economical and there would be no upkeep expense.⁵

The condition of the bridge was deemed to be so hazardous to the public safety that the mayor, the city attorney and members of the board of public works announced the closure of the bridge on August 11, 1915, effective immediately. The closure of the Main Street steel bridge brought on protests from the business community and the people in general. G. K. Jefferies, general superintendent of the T.H.I. & E. traction company also supported construction of a temporary bridge and suggested that the traction company would be willing to bear a share of the cost for a temporary bridge. A temporary bridge, based on the plans prepared by the engineer, the county engineer and the engineer of the traction company was constructed at a cost of \$6,500 in December 1915. The temporary bridge was located just south of the steel bridge and carried cars of the traction company.⁶

Construction of the existing bridge:

County bridge engineer Mueller urged the construction of an entirely new bridge at Main Street over the Whitewater River. The engineer advised the county commissioners that steps be taken without delay for the removal of the old structure and the erection of a new concrete bridge with not less than a 60 feet wide roadway and in keeping with the traffic then using the structure. It was proposed that a temporary bridge would have to be built across the channel where the old National Road wooden bridge was located directly north of the street railway power plant.⁷

Three sets of bridge plans were prepared by the county bridge engineer Mueller. One of the plans was for a bridge with a large arch across the channel and a smaller arch across the C & O switch tracks. The second plan was for a bridge across the river channel and several smaller arches leading to the east abutment. The third was for a bridge on a level extending to a point between the Second and Third Streets.⁸

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A public meeting under the auspices of the Wayne County National Old Trails Road Association was held at the west end of the bridge on August 25, 1915 to discuss the proposed bridge. Three resolutions were passed at the meeting. Firstly, the mass meeting endorsed the action of the county officials for appropriating funds to erect a temporary bridge to relieve the present inconvenience and abate the traffic congestion over the Doran bridge. Secondly, the people were not in favor of any appropriation for a permanent bridge or undue haste in determining the character of such structure until the whole matter is thoroughly considered and the plans matured, which would adequately provide peoples' present and prospective needs. Thirdly, the resolution favored a level bridge in keeping with the surroundings, which would not only amply provide for the demands made upon it, but which the people may take a just pride since the bridge was to be an integral part of the great national highway that was deemed to be certain to pass through Richmond.⁹

In 1917, a contract was let out to replace the steel bridge. The contract for building of the bridge was let to Mr. Isaac E. Smith on May 12, 1917. The amount on his bid was \$169,000. It took little over three years to complete the construction due to the shortages caused by the Great War. The contractor found it extremely difficult to secure the necessary labor and materials to be used in the construction.

On July 14, 1917, the commissioners of Wayne County ran short of funds and transferred \$80,000 from the South Side Bridge Fund to the Main Street Bridge Fund. In September 1917, they sold \$100,000 worth of bonds for the Main Street bridge. After letting the new contract on July 3, 1919, the commissioners of the county council sold \$55,000 of additional bonds. Following this, the county council appropriated \$825.45 to enable the contractor to accomplish the extra work necessary to complete the construction. The original appropriation of \$180,000 was made by the county council. Immediately, the work was started on construction and when about two-thirds of the work was accomplished, the contractors asserted that unless the figure, for which they had agreed to construct the bridge was raised, they would incur heavy monetary loss. They claimed that the increased costs of both men and material, due to the shortages caused by the Great War in Europe was the reason. As a result of the war, the construction was halted for the time.

A special act of legislature in 1919 permitted the county commissioners to void the bridge contract because of the unforeseen rises in the prices of material and labor. The old contract was cancelled on April 26, 1919. The State Board of Accounts sent a team of engineers to Richmond to examine the work done so far, and to estimate the future cost to complete the bridge. On July 3, 1919, the contract for the bridge was re-let at the amount of \$100,000. This appropriation was for the specified work that remained to be done and had absolutely nothing to do with the original appropriation. The existing Main Street Bridge was accepted on July 20, 1920 by the Board of Commissioners.

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SITE PLAN
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